

10/528306

Rec'd PCT/PTO 17 MAR 2005



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Attestation

REC'D 20 OCT 2003  
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Die angehefteten Unterlagen stimmen mit der ursprünglich eingereichten Fassung der auf dem nächsten Blatt bezeichneten europäischen Patentanmeldung überein.

The attached documents are exact copies of the European patent application described on the following page, as originally filed.

Les documents fixés à cette attestation sont conformes à la version initialement déposée de la demande de brevet européen spécifiée à la page suivante.

**Patentanmeldung Nr.      Patent application No.      Demande de brevet n°**

02292278.5

**PRIORITY DOCUMENT**  
SUBMITTED OR TRANSMITTED IN  
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RULE 17.1(a) OR (b)

Der Präsident des Europäischen Patentamts;  
Im Auftrag

For the President of the European Patent Office

Le Président de l'Office européen des brevets  
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R C van Dijk

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Anmeldung Nr:  
Application no.: 02292278.5  
Demande no:

Anmeldetag:  
Date of filing: 17.09.02  
Date de dépôt:

Anmelder/Applicant(s)/Demandeur(s):

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Bezeichnung der Erfindung/Title of the invention/Titre de l'invention:  
(Falls die Bezeichnung der Erfindung nicht angegeben ist, siehe Beschreibung.  
If no title is shown please refer to the description.  
Si aucun titre n'est indiqué se referer à la description.)

Hybrid chip

In Anspruch genommene Priorität(en) / Priority(ies) claimed /Priorité(s)  
revendiquée(s)  
Staat/Tag/Aktenzeichen/State/Date/File no./Pays/Date/Numéro de dépôt:

Internationale Patentklassifikation/International Patent Classification/  
Classification internationale des brevets:

H01L21/00

Am Anmeldetag benannte Vertragstaaten/Contracting states designated at date of  
filling/Etats contractants désignées lors du dépôt:

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

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**Claims**

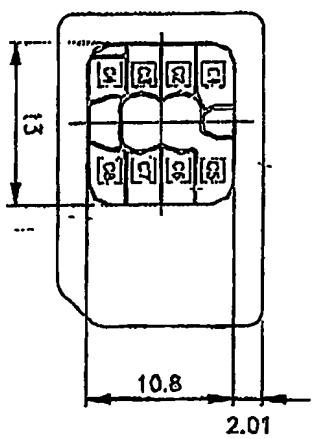
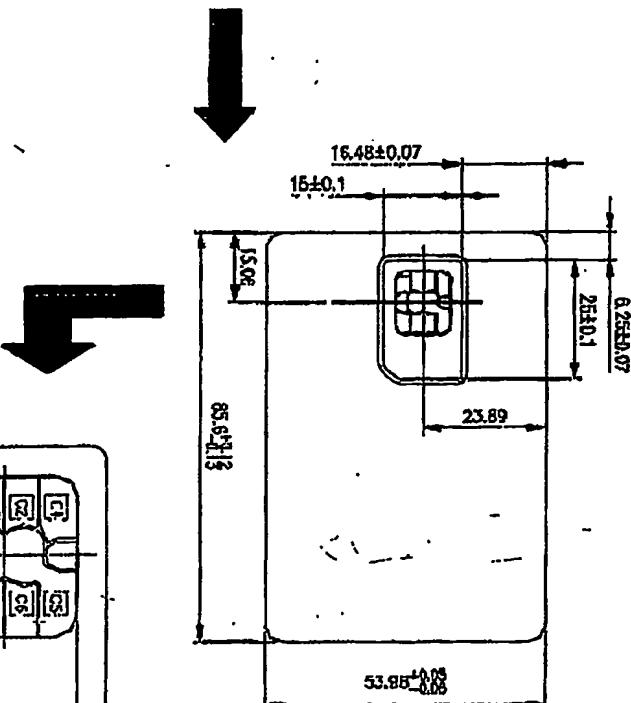
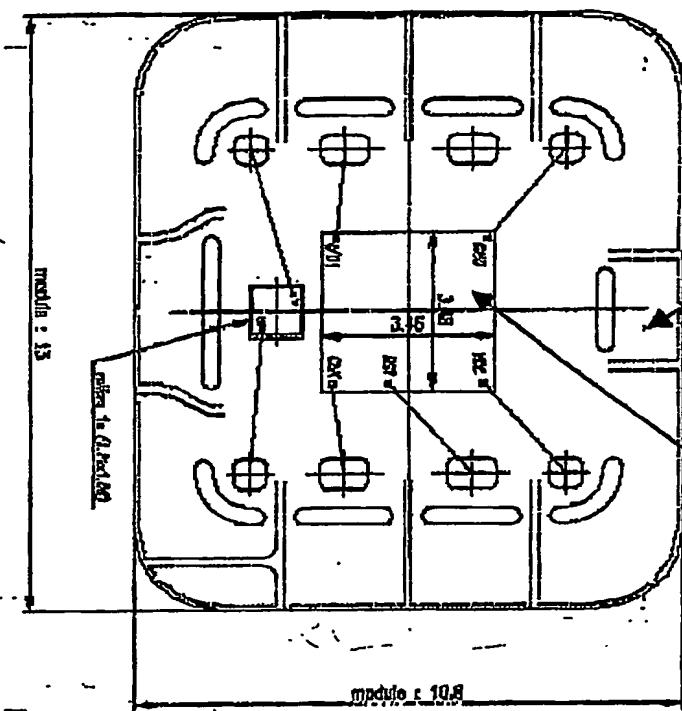
1. An hybrid device comprising an hybrid module wherein the hybrid module comprises an integrated circuit.

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# Chips bonded side by side

MODULE

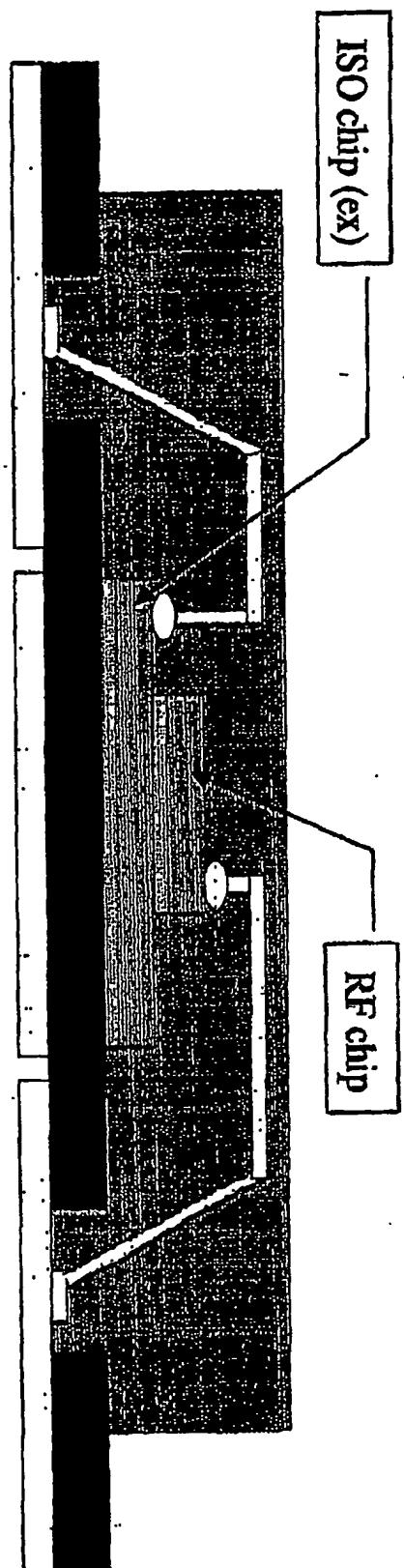
ISO chip (ex)



- standard process and equipment;
- linked to requested chip, module modification certainly needed

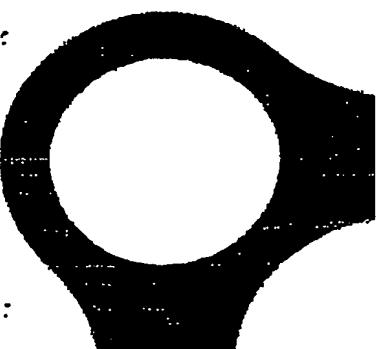
SchlumbergerSema

# Stacked chips (1/2)



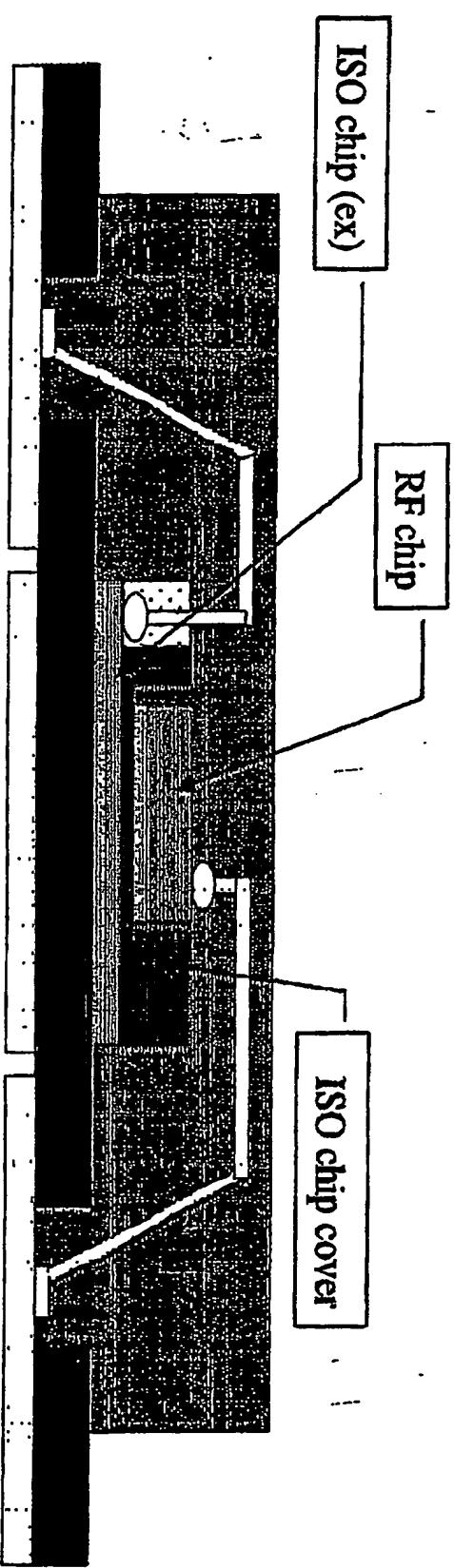
- flexible solution,
- need to use thin chips (80-100 $\mu$ m Vs 180 $\mu$ m in standard):
  - ⇒ lot of contacts already exist with founders or subcontractors able to thin wafers,
  - ⇒ handling of thin wafer already in Schlumberger culture,
  - ⇒ characterisation method for thin silicon mechanical behaviour designed!

SchlumbergerSema



# Stacked chips (2/2)

⇒ to limit use of very thin wafers, used of Schlumberger SiShell technology:



⇒ For other project, Schlumberger developed a technology consisting in process very thin wafer ( $40\mu m$ ) on which is bonded a silicon cover:

- the RF chip is placed in an hole in the cover ⇒ no more need to thin the wafer,
- technology already mastered by Schlumberger ⇒ workshop and process set up in 2001

SchlumbergerSema



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